REMARKS

The Office Action indicated Claims 1-8 and 16-26 were allowed.

Claim 15 was indicated allowable if rewritten in independent form. Claim 9 has now been redrafted to include the allowable subject matter of Claim 15 and, accordingly, it is believed that Claims 9-15 are now allowed.

Claim 13 has been amended to address the 35 U.S.C. § 112 issue.

Newly drafted Claim 27 and dependent Claims 28-30 address and resolve problems neither contemplated nor solved by the references applied of record. The present invention permits a flush mounting of an integral metal insert that will not unduly stress a structural panel while mechanically locking the insert within the panel. An annular rim member of a predetermined circumference has an inner wall surface with an annular groove for providing a predetermined deformable thickness to the rim member. The annular groove is operatively positioned adjacent to an upper edge of the rim member to enable the rim member to be forced downward as it is installed flush with a panel surface while deforming a portion of the rim member to extend outward beyond the predetermined circumference.

The *Worthing* (U.S. Patent No. 4,817,264) is assigned to the assignee of the present application. The *Worthing* reference specifically attempted to address a potential problem of an all-metal integral fastener or spacer that could corrode as a result of galvanic interaction between a carbon graphite fiber-reinforced material forming a panel and the metal insert such as a metal insert of aluminum. Thus, the problem addressed was corrosion when a metal insert of a higher potential was placed into contact with a carbon graphite fiber material of a lower electrical potential. The metal insert would act as the anode while the environment of the carbon graphite would act as a cathode, and the resultant current flow would corrode or erode away the metal

insert. A person of ordinary skill reviewing this disclosure would recognize that this is the problem that was addressed and solved by the *Worthing* reference.

The solution to this problem was to provide a hybrid fastener structure that represented a combination of a thermoplastic material as the body of the fastener with a flange of a corrosion-resistant steel. The compromise is a balancing between the total weight of the composite versus the solution to the corrosion problem. Thus, while the composite could weigh more than a conventional aluminum fastener, it would have sufficient strength because of the steel flange encapsulated within the plastic body to prevent corrosion.

In the first embodiment of the invention shown in Figures 1 through 4, the steel flange 3 could be molded within the thermoplastic resin body portion 1. When mounted within a panel 10, as shown in Figure 4, ultrasonic energy would be applied to the top edge of the body portion to soften the thermoplastic material and cause the material to flow outward for locking the thermoplastic material above and over the upper surface of the panel. *Worthing* did not teach a flush installation of a metal spacer or fastener with a wall thickness specifically designed to be deformed outward within the panel by an application of an axial force. Rather, it taught an overlapping of a plastic body member heated by the friction of an ultrasonic applicator to the plastic material.

There is no teaching within the *Worthing* reference that recognizes the problems addressed and solved by the present invention, nor is there any suggestion or motivation to apply the teachings of the *Worthing* reference to the present problem solved by the current inventors or to seek other references within the knowledge of a person of ordinary skill in this art.

As noted in the case of *In re Rijckaert*, 28 USPQ2d 1955 (CAFC 1993):

> In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1143, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. *Id.* "A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested that claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 782, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) quoting *In re Reinhart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)). If the examiner fails to establish a *prima facie* case, the rejection is improper and will be overturned.
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> *Rijckaert* argues that the examiner has not established a *prima facie* case of obviousness and that the examiner's assumptions do not constitute the disclosure of prior art. We agree.

It should be noted that the burden of establishing a *prima facie* case of obviousness lies with the Patent Office. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988) (stating: "The PTO has the burden under section 103 to establish a *prima facie* case of obviousness"). To establish a *prima facie* case of obviousness, (1) there must be some suggestion or motivation (either in the references themselves or in the knowledge generally available to one of ordinary skill in the art) to combine the reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference must teach or suggest all the claim limitations. See MPEP §§ 2142-43.

There are a number of evaluations required under Section 103. One highly relevant inquiry is "[t]he relationship between the problem which the inventor . . . was attempting to solve and the problem to which any prior art reference is directed." *Stanley Works v. McKinney Mfg. Co.*, 216 USPQ 298, 304 (Del. D.C. 1981). Thus, in analyzing the prior art under Section 103 of the Act, we must clearly comprehend the problem addressed by the present inventors and that

problems must be compared or contrasted, as the case may be, with the problems addressed by the prior art.

Pursuing further the "problem" analysis required under Section 103 of the U.S. Patent Act, the applicability of any reference against the claims of a pending U.S. patent application requires compliance with *In re Gibbons*, 100 USQP 398, where it stated:

> In considering the questions of the invention, it is necessary to determine whether or not the art relied upon contains adequate direction for the practice of the invention without resort to the involved application.
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> (Emphasis added.)

In *Orthopedic Company, Inc. v. United States*, 217 USQP 193 (CAFC 1983), the Federal Circuit set forth a useful guideline for determining the scope and content of the prior art. *Orthopedic*, at pages 196-197, also focuses on the "problem" faced by the inventors:

> In determining the relevant art . . . one looks at the nature of the problem confronting the inventor.
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> [W]ould it then be nonobvious to this person of ordinary skill in the art to coordinate these elements in the same manner as the claims in suit? The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit [the patent application before the Examiner] as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness.
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> (Emphasis added.)

The Office Action acknowledged that the *Worthing* reference did not teach a body member of metal nor a rim member having an inner wall surface with an annular groove.

The Office Action, however, contended that it would be obvious to a person of ordinary skill in the art to take a teaching from the *Bartholomew* (U.S. Patent No. 5,207,462) to make the body member of *Worthing* aluminum and to provide an inner groove.

More expressly, the Office Action contended that: "The motivation for doing so would have been to provide more strength and a recessed seat for the bolt head." Applicant respectfully traverses this assertion in the Office Action.

The *Bartholomew* reference is not even directed to a fastener or spacer for use in an aircraft application, but rather discloses a method of inserting a horseshoe-shaped spring or ring member into a female bore with a pusher structure having a series of axially extending fins 40 as shown in Figures 4 through 6. The ring can be compressed while held in alignment around a male shaft or tube 66 so that it will initially be compressed by a chamfered lead surface 86 to then snap out and lock within the ring groove 90. Certainly, the integrity of the ring groove 90 is required to maintain and support the ring 10 for holding the male tube 66 in place within the female member. (It is not designed to enable a deformation of a rim member to bulge outward to lock within a composite panel structure.)

As noted on Column 3, Lines 55-59:

> The purpose of fins 40 is to drive ring 10 into engagement with a groove (see FIG. 2) that is placed in a bore to retain ring 10. The surface 48 of fins 40 is dimensioned so as to drive ring 10 into an engaging position with the groove.

There is no suggestion that the ring groove is of any particular wall thickness to permit a deformation of a portion of a spacer for locking in a larger hole within an aircraft honeycomb panel. In fact, the dimensions of the female member, including the ring groove 90, are intended

to be maintained so that it is possible to subsequently collapse the diameter of the ring and thereby remove the male member 60 from the female part 80. See Column 4, Lines 29-30.

It should also be noted that the *Bartholomew* reference does not teach any specific type of material and suggests that all of the component parts could be made either entirely or partly of either plastic or metal. See Column 4, Lines 31-35.

Using the litmus test of the problem being resolved by the *Bartholomew* reference, it is clear that it does not provide a teaching reference to make any suggestion of a change in the *Worthing* reference that would suggest the present invention as set forth in independent Claim 27. If we hypothetically accept the alleged teaching of *Bartholomew* reference as relied upon in formulating the current rejection, namely that the body member of the *Worthing* reference should be made not from plastic but from a metal member such as aluminum to provide more strength, then it would render the *Worthing* reference inoperative, since the *Worthing* reference specifically did not want a metal member to avoid galvanic action and deterioration.

The citation of a reference that would teach away from the purpose of the basic reference and, in fact, render it inoperative, cannot be considered to be an obvious modification.

> [I]t is generally settled that the change in prior art device which makes the device inoperable for its intended purpose cannot be considered to be an obvious change.
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> *Hughes Aircraft Co. v. United States*, 215 U.S.P.Q. 787, 804 (Ct.Cl. Trial Div. 1982)

In summary, the *Worthing* reference is in the proper fastener art of the present invention, but it does not teach the advantageous features, nor does it address the problems resolved by the present application. The *Bartholomew* reference is not applicable for fastening objects into a honeycomb panel in the aircraft industry. It was cited only in hindsight from the teaching of the

present application. It would further render the solution sought by *Worthing* to resolve problems of galvanic corrosion inoperative.

Finally, even hypothetically combining these two references would not meet the parameters as set forth in independent Claim 27 and dependent Claims 28-30.

It is respectfully submitted that the case is now in condition for allowance, and an early notification of the same is requested. If the Examiner believes that a telephone interview will help further prosecution of the present invention, he is respectfully requested to contact the undersigned attorney at the listed phone number.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 30, 2004.

By: James Lee

Signature

Dated: August 30, 2004

Very truly yours,

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